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EXAMINER

ZHEN, LI B

ART UNIT

PAPER NUMBER

2151

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/339,649

Applicant(s)

BAIRD ET AL.

Examiner

Li B. Zhen

Art Unit

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☒ Claim(s) 4,9,22,24 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 14 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
2. Claims 14 and 27 recite the limitation "said physical devices" in lines 1 – 2 of claims 14 and 27. There is insufficient antecedent basis for this limitation in the claims. It appears the limitation should recite "said software controllable devices". For the purpose of examination the examiner will assume "said software controllable devices".

### ***Claim Objections***

3. Claims 4, 9, 22, 24, and 30 are objected to because of the following informalities:  
"said control object control object is polymorphic" (line 4 of claim 4),  
"said control objects are adapted so send" (line 3 of claim 22),  
"said control objects are adapted so send" (line 3 of claim 30),  
"control object is designated a manager object" (lines 1 – 2 of claim 9),  
"control object is designated a manager object" (line 2 of claim 24).  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1 – 4, 8, 11 – 14, 20 – 23, and 25 – 32 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,959,536 to Chambers.

As to claim 20, Chambers teaches (column 2, lines 1 – 20; column 7, lines 13 – 55) a plurality of software controllable devices (control system comprising multiple consumer electronic devices) that communicate over a network (cluster of devices), a plurality of control objects (for each device there is a Abstract Device) including logical attributes (device abstraction) of the devices, the control objects accept and issue control messages to and from the devices (Abstract Device has the responsibility of translating command messages it receives into actions on real device), the control objects register with the system (Abstract Devices register with Registry 208, Fig. 2), and the control objects maintain a list (Registry 208, Fig. 2) of all other registered control objects (Abstract Devices) and their logical attributes (registering requires a set of attributes). As to the control object being active while the respective device is functioning, Chambers teaches (column 7, lines 19 – 21) control object (Abstract Device) has the responsibility of reporting status changes in the software controllable device (real device). The control object would need to be active in order to receive and

report status changes; therefore, the control object would be active while the respective device is functioning.

As to claim 28, this is the same as claim 20 except for the limitation "at least one software controllable device". Claim 20 recites "a plurality of software controllable devices" which would include at least one software controllable device. Refer to the rejection of claim 20 above, which also meets this claim.

As to claims 2, 21 and 29, Chambers teaches (column 6, lines 30 – 50; column 11, lines 3 – 18) control objects are polymorphic (device abstraction extensions) and the control object are adapted to bind to any transport mechanism for communication with other control objects (protocol-independent communications).

As to claim 3, Chambers teaches (column 8, lines 50 – 56; column 15, lines 20 – 33) control object is embedded in an application (devices may embed a user-interface along with the device abstraction) and executed within a wrapper executable (Abstract Device Interface).

As to claims 8, 22 and 30, Chambers teaches (column 12, lines 5 – 15; column 8, lines 50 – 67) control objects logically and physically pass a control signal to the devices (Signal Routing) and the control objects are adapted to send a message to an interface in the device (messaging).

As to claim 23, Chambers teaches (column 11, lines 34 – 38) software controllable devices (Class D device) comprising application programming interfaces (native device driver or OS service). As to the devices containing an operating system,

Chambers teaches (column 6, lines 5 – 10) devices (Class D devices 114 – 116, Fig. 1) are more similar to Network Computers in computing capacity.

As to claim 4, this is a system claim that is a subset of the combination of system claims 21 and 23; note the rejections of claims 21 and 23 above, which also meets this system claim.

As to claims 11, 12, 25 and 31, Chambers teaches (column 7, lines 13 – 21 and 32 – 55; column 8, lines 54 – 56) a user interface (user-interface referred to as “Device Application” or “Applet) adapted to receive the control objects (download Abstract Device), retrieve the logical attributes (locate Abstract Devices by their attributes), accept and issue control messages to and from the control object (Applet and Abstract Device communicate through a messaging system), and control the devices across the network (Applet may not be running on the same Class D device which is hosting the Abstract Device) and locally (Applets and Abstract Devices always communicate through messaging, even when they reside in the same Class D device) .

As to claim 1, this is a combination of system claims 20 and 25; note the rejections of claims 20 and 25 above, which also meet this system claim

As to claims 13, 26 and 32, Chambers teaches (column 2, lines 33 – 49; column 8, lines 5 – 10) the user interface is transparent across the network (actual location of an object to be transparent allowing an Applet running in one device to control some resource provided by another) and the user interface takes on the personality of the respective physical device (the user-interface is customizable and extendible).

As to claims 14 and 27, as best understood by examiner (note the 35 USC § 112 rejection above), Chambers teaches (column 7, lines 32 – 55) a physical device (Class D device 116, Fig. 1) that comprises a display (have a display of its own) and the display is adapted to control others of the devices via the network and the control objects (Applet for the Abstract Device of device 108, which is hosted by Class D device 114, may run on Class D device 116).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9, 10, 15 – 19, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers in view of U.S. Patent No. 5,574,860 to Perlman.

As to claim 15, Chambers teaches (column 2, lines 1 – 20; column 7, lines 13 – 55; column 11, lines 50 – 61) a plurality of software controllable devices (control system comprising multiple consumer electronic devices) that communicate over a network (cluster of devices), a plurality of control objects (for each device there is a Abstract Device) including logical attributes (device abstraction) of the devices, the control objects accept and issue control messages to and from the devices (Abstract Device has the responsibility of translating command messages it receives into actions on real device), the control objects register with the system (Abstract Devices register with Registry 208, Fig. 2), the control objects maintain a list (Registry 208, Fig. 2) of all other

registered control objects (Abstract Devices) and their logical attributes (registering requires a set of attributes), and broadcasting a message from the control object to inform other registered control objects that the enabled control object exists (new nodes may optionally send a broadcast announcing their availability). Chambers does not teach a first registered control object is designated as manager object to maintain the list of registered control objects.

However, Perlman teaches (column 5, lines 39 – 45; column 6, lines 22 – 28) a method of generating, distributing and maintaining a list of operational nodes in a network that includes a first registered control object (node with the smallest identifying number) is designated as manager object (designated node).

It would have been obvious to apply a manager object to maintain a list of registered control objects as taught by Perlman to the invention of Chambers because the manager object would provide a synchronized list of all registered control objects that would be distributed to all of the registered objects.

As to claim 16, Chambers as modified teaches (column 5, lines 39 – 45; column 6, lines 30 – 45 of Perlman) sending the list to any new control object (node N6) that registers (send N6 a DN Hello message) and periodically broadcasting the list of registered control objects to all control objects (designated node periodically sends a DN Hello message, which includes a complete list of nodes, to all of the nodes).

As to claim 17, Chambers as modified teaches (column 5, lines 39 – 45 of Perlman) wherein the list contains an identifier (node identification) and an address (node address) of control objects.



As to claim 18, Chambers as modified teaches (column 6, lines 45 – 50 of Perlman) performing an election if the manager object ceases to function (if designated node drops out of the network...there will be a further exchange of messages to determine new designated node).

As to claim 19, Chambers as modified teaches (column 6, lines 40 – 45 of Perlman) distributing the list to all registered control objects (designated node updates lists and sends copies to the other nodes with the DN Hello messages) if any of the control objects ceases to function (nodes dropping from network).

As to claims 9, 10, and 24, Chambers teaches (column 8, lines 17 – 50; column 11, lines 50 – 60) registering control objects, performing list management (register and unregister objects), periodically broadcasting messages (broadcast message is sent periodically), the list contains logical attributes (Abstract Device attributes), and identifier, and an address of control objects (registry provides a service on a system-wide basis to locate Abstract Devices). Chambers does not teach a first registered control object is designated as manager object and periodically broadcasting the list to all control objects.

However, Perlman teaches (column 5, lines 39 – 45; column 6, lines 22 – 28) a method of generating, distributing and maintaining a list of operational nodes in a network that includes a first registered control object (node with the smallest identifying number) is designated as manager object (designated node) and the manager object periodically broadcasting the list of registered control objects to all control objects (designated node periodically sends a DN Hello message, which includes a complete

list of nodes, to all of the nodes) wherein the list contains an identifier (node identification) and an address (node address) of control objects.

It would have been obvious to apply a manager object periodically broadcasting the list of registered control objects to all control objects as taught by Perlman to the invention of Chambers because it would notify all registered control objects about the existence and location of each other.

8. Claims 5 – 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers in view of U.S. Patent No. 6,199,136 to Shteyn.

As to claim 5, Chambers teaches control objects, but does not specify the control object comprising a component object model (COM) object.

However, Shteyn teaches (column 6, lines 1 – 50) using COM-based software components for control of devices in a home automation network.

It would have been obvious to apply using COM-based software components as taught by Shteyn to the invention of Chambers because COM is a generic mechanism allowing applications to communicate in a consistent way.

As to claim 6, Chambers teaches (column 8, lines 50 – 56) the control objects (Abstract Devices) providing wrappers (Abstract Device Interface) for clients (Applets).

As to claim 7, Chambers teaches (column 11, lines 33 – 39) control objects (device abstractions, Abstract Devices) utilize transport DLLs (native device driver) for transporting data.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,434,447 to Shteyn teaches a system of controlling electronic devices.

U.S. Patent No. 6,032,202 to Lea teaches a home audio/video network with device control.

U.S. Patent No. 6,314,459 to Freeman teaches home network autoconfiguration.

U.S. Patent No. 6,052,750 to Lea teaches upgradeable software control of devices in a home audio video network.

U.S. Patent No. 6,314,447 to Lea teaches a method for determining processing capabilities of devices in an electronic network.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (703) 305-3406. The examiner can normally be reached on Mon - Fri, 8am - 4:30pm.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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Li B. Zhen  
Examiner  
Art Unit 2151

lbz  
September 6, 2002

A handwritten signature in black ink, appearing to read 'St. John Courtenay III', written in a cursive style.

ST. JOHN COURTENAY III  
PRIMARY EXAMINER